

EXTIRA[®]

TREATED EXTERIOR PANEL



Use Extira for Exterior Paint Grade Signs *Resists Moisture, Rot and Termites*

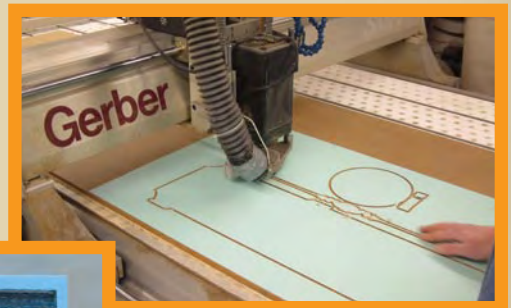
- Sanded and smooth two sides; meets caliper requirements of +/- 0.005"
- Can be machined, sandblasted, routed, and carved
- Non-structural paint grade panel
- Better value than HDU
- Does not require edge sealing
- No added formaldehyde
- 5 year warranty



Machining Extira



Routing Extira



Carving Extira





With Five Thicknesses and Three Panel Sizes, Extira Measures Up to Any Project.

Finishing Recommendations

Extira is a wood based composite that must be primed and painted before being exposed to the outdoors. You may want to use adhesives or lamination to affix other materials to Extira. Because CMI makes wood composite panels and not adhesives, primers or other materials, CMI cannot guarantee the performance or compatibility of any material to Extira. CMI regularly tests materials at the CMI research and development testing laboratory and performs testing with the manufacturers of popular primers and adhesives. Visit www.extira.com for updates on compatible materials and techniques. Qualification of all materials and their end use are the responsibility of the end user. CMI has no liability for primers, paints, adhesives or any other treatment of Extira.

Choose from a variety of sizes and thicknesses					
Size (nominal)	Thickness (+/-0.005")				
	1/2"	5/8"	3/4"	1"	1-1/4"
4' x 8' (49" x 97")	●	●	●	●	●
4' x 16' (49" x 194")	●	●	●	●	●
2' x 16' (25" x 194")	●	●	●	●	●

TYPICAL PROPERTIES — 3/4" EXTIRA		
Termite Resistance (10 is the highest score)	7.9 out of 10 (3 year exposure)	
Rot Resistance (0 is the highest score)	1.0 (3 year exposure)	
Advanced Bond Integrity (% strength retention)	90%	
Density	47 lb/ft ³	0.753 g/cm ³
MOR	3660 psi	25.2 MPa
MOE	357 kpsi	2461 MPa
Internal Bond	116 psi	800 kPa
Direct Screw Withdrawal		
Face	330 lbf	150 kgf
Edge	325 lbf	147 kgf
24-Hour Soak		
% Thickness Swell	3.5%	



For more information, visit extira.com

Made By



EXTIRA®
TREATED EXTERIOR PANEL

extira.com

Several sealer, paint and tape manufacturers have provided their recommendations for finishing materials suitable for use on EXTIRA. CMI provides this information, free of charge, to prospective users who must independently determine the suitability of such materials for its purpose. It is the user's responsibility to test and qualify all materials the user intends to use on EXTIRA. CMI does not guarantee the performance or compatibility of the materials listed in this document, or any other materials, nor does CMI bear any liability associated with the secondary treatment of EXTIRA. Samples of EXTIRA are available upon request for your testing purposes.

This document is not a guideline or direction meant to guarantee any result; it is strictly informational in nature. CMI makes no warranties or representations, express or implied, as to the accuracy, completeness, or any other aspect of the information in this document and CMI assumes no liability in connection with any use of the information. CMI provides this document to you on the condition that you will make your own complete assessment of the information given, prior to using the materials for your signs. CMI has no knowledge of or control over your use of the information, and it is provided "as is" and without any warranty of any kind. Accordingly, CMI excludes all implied warranties, including but not limited to any warranty of merchantability or fitness for a particular purpose and warranties to the effect that the use of this information will not infringe any patent, copyright or trademark of any third party.

CMI welcomes information from you about your experience with the use of these materials or any other in the secondary treatment of EXTIRA.

FINISHING:

For signs that require extremely high primer/surface adhesion, such as when using sand mask agents, use an exterior grade surface sealer before applying the prime coat. We suggest an oil-based polyurethane. For maximum surface strength results, use a high quality, solvent or oil-based primer with a surface sealer. We have found that epoxy primers may also perform well. High quality water-based primers will provide long term performance, but are not recommended for applications requiring high primer-to-surface adhesion. If the creation of your sign requires the use of sand masking agents, use a low tack product with a rating around 2.2 lb/inch or less.

Be sure to follow the instructions that the sealer manufacturer provides for use. In general, we suggest that you do not let the sealer cure on the surface. It is important to have good surface penetration to achieve the best result. If there are areas of build-up, they should be lightly sanded before applying the primer application.

SEALER MANUFACTURER	SEALER SYSTEM
ZAR	Exterior Polyurethane — Clear Coat
Poly Coatings Int'l Division, Realsit Corp.	Safety Coat X100
Harrison Paints	Dura Guard Alkyd Surface Sealer
Smith and Co. Epoxy Products	Multi Prime, Clear Penetrating Epoxy
Cargill Inc.	Dilulin (requires addition of metallic driers)

PRIMERS:

Contact the paint manufacturer for final topcoat compatibility with the selected primer system. Be sure to follow the paint manufacturer's instructions for use.

PAINT MANUFACTURER	PRIMER SYSTEM
One Shot, LLC	Ti-Cote Clear Primer Barrier Coat, 43101 I — Flat (water based) Acrylic Bonding Primer/Block out White 5005 (water based)
Matthews Paints	274 908SP White Epoxy Primer 274 228SP E-Primer (low VOC)
Ronan Paints	Prime All — Waterborne Acrylic Primer/Stain Kill (2 coats recommended, water based)
Zinsser Co., Inc.	Cover-Stain Primer Sealer (oil based)
Harrison Paints	Versa-Seal Primer 249-88 (oil based) Versa-Seal Primer 248-88 (water based)

Matthews Paint has provided the following instructions for specific sign finishes:

NON-SANDING SYSTEM	SANDING SYSTEM
<p>CONVENTIONAL:</p> <ol style="list-style-type: none"> 1. Tack off Extira with a clean tack cloth. Avoid using harsh solvents to clean Extira as the solvents may cause the substrate to swell. 2. Apply one to two coats of the 274 908SP White Epoxy Primer mixed per directions. See MPC125 Technical Bulletin for mixing and spraying instructions. 3. Topcoat with conventional Satin MAP or conventional Gloss MAP per directions. See MPC102 Technical Bulletin for Satin MAP, or MPC100 for Gloss MAP. <p>LOW VOC:</p> <ol style="list-style-type: none"> 1. Tack off Extira with a clean tack cloth. Avoid using harsh solvents to clean Extira as the solvents may cause the substrate to swell. 2. Apply one to two coats of the 274 228SP E-Prime mixed per directions. See MPC126 Technical Bulletin for mixing and spraying instructions. 3. Topcoat with Low VOC Satin MAP or Low VOC Gloss MAP per directions. See MPC107 Technical Bulletin for Low VOC Satin MAP, or MPC106 for Low VOC Gloss MAP. 	<p>CONVENTIONAL:</p> <ol style="list-style-type: none"> 1. Tack off Extira with a clean tack cloth. Avoid using harsh solvents to clean Extira as the solvents may cause the substrate to swell. 2. Apply one to two coats of the 274 908SP White Epoxy Primer mixed per directions. See MPC125 Technical Bulletin for mixing and spraying instructions. 3. Apply two to three coats of 6001SP Polyester Primer Surfacer mixed per directions. See MPC169 Technical Bulletin for mixing and spraying instructions. 4. Sand the 6001SP to leveling. Final sand with a grit no coarser than 600 before applying a topcoat. 5. Topcoat with conventional Satin MAP or conventional Gloss MAP per directions. See MPC102 Technical Bulletin for Satin MAP, or MPC100 for Gloss MAP. <p>LOW VOC:</p> <ol style="list-style-type: none"> 1. Tack off Extira with a clean tack cloth. Avoid using harsh solvents to clean Extira as the solvents may cause the substrate to swell. 2. Apply one to two coats of the 274 228SP E-Prime mixed per directions. See MPC126 Technical Bulletin for mixing and spraying instructions. 3. Apply two to three coats of 6001SP Polyester Primer Surfacer mixed per directions. See MPC169 Technical Bulletin for mixing and spraying instructions. 4. Sand the 6001SP to leveling. Final sand with a grit no coarser than 600 before applying a topcoat. 5. Topcoat with Low VOC Satin MAP or Low VOC Gloss MAP per directions. See MPC107 Technical Bulletin for Low VOC Satin MAP, or MPC106 for Low VOC Gloss MAP.

SANDMASK TAPES:

In general, use a tape with a low grip adhesive, such as a rating of 2.2 lb/inch. The following tapes have produced acceptable results. Test or qualify the tapes with Extira before making a sign. Final qualification is the responsibility of the end user.

TAPE MANUFACTURER	PRODUCT
Avery Dennison	SX 3402 Yellow/Removable/78# Calendared Vinyl Film
Avery Dennison	SX 3400 White/Removable/78# Calendared Vinyl Film

CONTACT INFORMATION:

One Shot, LLC.
Technical Support
5300 Fifth Avenue
P.O. Box 6369
Gary, IN 46406
Phone: 219.949.1684
Email: asklouie@hotmail.com

3M
Contact: Technical Support
Industrial Tape and Specialties Div.
3M Center Building
220-7W-03
St. Paul, MN 55144-1000
Phone: 800.362.3550
Email: www.3M.com/industrialtape

Avery Dennison Graphics & Reflective Products Division NA
Contact: Answerline
250 Chester Street 6M
Painesville, OH 44077
Phone: 800.443.9380 option 1

Cargill, Inc.
P.O. Box 9300
Minneapolis, MN 55440
Phone: 800.842.3631

HartCo. Inc.
Contact: Customer Support
1280 Glendale-Milford Road
Cincinnati, OH 45215
Phone: 800.543.1340
Email: info@harcoservice.com

Harrison Paint Co.
Contact: Guy Braun x 139
Contact: Gary Bickel x 133
1329 Harrison Ave. SW
Canton, OH 44706
Phone: 800.321.0680
Email: GBraun@harrisonpaint.com

Matthews Paint
Contact: Jan Scheske
Customer Service Group
LakeView Corporate Park
8201 – 100th Street
Pleasant Prairie, WI 53158
Phone: 800.323.6593
Email: jscheske@ppg.com

Poly Coatings Int'l Div., Realsit Corp.
P.O. Box 48
New Lowell
Ontario, Canada L0M1N0
Phone: 705.424.7576

Ronan's Paint Corp
Contact: Bob Chlupsa
749 East 135th Street
Bronx, NY 10454
Phone: 800.247.6626
Email: ronanspaint@aol.com

Zar/UGL
P.O. Box 70
Scranton, PA 18501
Phone: 800.845.5227

Zinsser Co., Inc.
Contact: Customer Support
173 Belmont Drive
Somerset, NJ 08875
Phone: 732.469.8100
Email: bullseye@zinsser.com

What is Extira?

- A treated wood composite panel product for non-structural applications for exterior and high moisture interior environments.
- Available in panel dimensions of 49" x 97", 49" x 194" and 25" x 194".
- Available in thicknesses of 1/2", 3/4", 5/8", 1" and 1 1/4" (+/- 0.005")
- Smooth, unprimed, square cut panels

What are the key benefits of Extira?

- Treated with zinc borate and manufactured with phenolic resins; resists moisture, rot and termites.
- Has a more consistent density and thickness compared to wood, which means there are more consistent physical properties throughout the board.
- Environmentally friendly; byproducts of other lumber operations are used to create Extira.
- No added formaldehyde.
- 5 year limited warranty.

How is Extira made?

- Wood fiber; phenolic resins, zinc borate and a water repellent are combined to form a thick, fiber mat. Extira is 90% wood.
- Zinc borate controls the growth of white and brown rot and other wood-destroying organisms. It is an EPA-registered biocide.
- The fiber mat is loaded into a sealed cavity.
- Steam is injected directly into the mat, making heat transfer uniform through the mat. This process is controlled by forced convection.
- Steam escapes the mat evenly from the center to the periphery.
- This improves the board properties and allows thicker board dimensions.
- This process contrasts with the slow, outside-to-inside temperature rise found in conventional MDF-type pressing.
- After cooling, Extira is sanded on both sides with a six-headed sander to reach thickness tolerances of +/-0.005".

How is MDF made?

- Wood fibers are blended with resins (often urea formaldehyde resins) and formed into a mat.
- No ingredients for moisture, rot or termite resistance are added.
- The mat is pressed between hot platens.
- Heat is transferred from the platens to the mat. This can be a slow process because air becomes trapped in the mat and moisture evaporates during this process. It also takes a long time to transfer heat to the center of the mat. Air and steam escape around the periphery of the mat. The temperature at the surfaces of the mat is greater than the core during the press cycle.
- The properties of the final product are influenced greatly by the final core temperature within the mat.
- Due to this process, the board is not necessarily consistent throughout all points.

How does Extira compare to MDF?

	MDF	Extira
Composition	Wood, urea formaldehyde resin	Wood, phenolic resins, zinc borate, water repellent and other ingredients
Manufacturing Process	Pressed between hot platens	Proprietary, patented steam injection technology using TEC [™] process
Benefits	Not uniformly dense throughout MR MDF offers moisture resistance No termite or rot protection	Consistent density Moisture, rot and termite resistance Exterior performance
Warranty	30 days	5 years

- In internal CMI bucket testing, Extira exhibited substantially smaller edge cracks after exposure and air drying than Norbord MR and Medex NC. Call CMI Marketing for test details at 1.866.382.8701.
- Caliper swell when saturated in water improves 1-1/2 to 5 times comparing Extira to MR grade and typical MDF.

CMI manufactures another product, MiraTEC Trim, using the same ingredients and manufacturing technology which has performed exceptionally well on the market since 1998.

Why is Extira better than wood?

- Extira has stable pricing and availability
- It has no knots or voids, therefore offering 100% yields
- Resists checking, splitting and cracking
- Kind to the environment
- Resists termites and rot.

How is Extira like wood?

- Extira is 90% wood so it retains some of same attributes. It handles and machines well.

Does Extira contain urea formaldehyde?

- No, the manufacture of Extira utilizes only phenolic resins which provide excellent durability and moisture resistance.
- LEED Credits Supported: Indoor Environmental Quality 4.4

What is zinc borate?

- Zinc borate is an EPA-registered biocide. It is a wood preservative that provides protection from wood destroying organisms for wood composite materials. It is added during the manufacturing process to control the growth of white and brown rot decay fungi. Zinc borate is a broad-spectrum fungicide with no demonstrated adverse environmental effects.

Paint and adhesive manufacturers have provided their recommendations for finishing materials suitable for use on EXTIRA. CMI provides this information, free of charge, to prospective users who must independently determine the suitability of such materials for its purpose. It is the user's responsibility to test and qualify all materials the user intends to use on EXTIRA. CMI does not guarantee the performance or compatibility of the materials listed in this document, or any other materials, nor does CMI bear any liability associated with the secondary treatment of EXTIRA. Samples of EXTIRA are available upon request for your testing purposes.

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CMI welcomes information from you about your experience with the use of these materials or any other in the secondary treatment of EXTIRA.

FINISHING:

Extira must be primed and painted or finished before use. Use a high quality exterior oil/alkyd solvent-based or acrylic latex primer system specifically designed for use on wood composite substrates. The final topcoat should be compatible with the primer system used. Ninety-degree (90°) edges should be eased where possible to improve paint coverage and to extend service life. Final qualification is the responsibility of the end user.

The companies listed below have tested paint systems for use with Extira. The following topcoats are not recommended by CMI or most paint manufacturers because of short service life, poor protection against UV light and a higher potential for performance problems:

- Shake and shingle paints, clear coatings, flat oil/alkyd paints topcoats, and vinyl acetate (PVA) base paints.
- Transparent and semi-transparent stains.

FINISHING CONTACT INFORMATION:

One Shot, LLC.

Technical Support
5300 Fifth Avenue
P.O. Box 6369
Gary, IN 46406

Phone: 219.949.1684
Email: asklouie@hotmail.com

Akzo Nobel Coatings, Inc.

Contact: Forest Flemming
1431 Progress Ave.
High Point, NC 27261

Phone: 336.801.0820
Email: forest.g.flemming@akzo-nobel.com

Matthews Paint

Customer Service Group
LakeView Corporate Park
8201 – 100th Street
Pleasant Prairie, WI 53158

Phone: 800.323.6593
Email: mpcmail@ppg.com

Sherwin Williams

Contact: Hal Shackelford
Chemical Coatings
P.O. Box 304
Krum, TX 76249

Phone: 940.482.7068
Email: hal.h.shackelford@sherwin.com

T.J. Ronan Paint Corp

Contact: Bob Chlupsa
749 East 135th Street
Bronx, NY 10454

Phone: 800.247.6626
Email: ronanpaint@aol.com

Valspar

Contact: Brian Lewallen
Global Wood Coatings Group
1717 English Road
High Point, NC 27261

Phone: 800.395.7047
Email: blewallen@valspar.com

ADHESIVES:

The following companies have tested Extira with the products listed below for the specific applications shown. Contact the manufacturer for final overlay compatibility, recommendation on specific usage, adhesive quantities and press conditions before using the product specified.

EXTERIOR APPLICATIONS

Glue Manufacturer	Glue System	Application
Ashland Performance Materials	Isoset WD3-A322/CX-47 (water based)	HPL
	Isogrip 2065D (moisture cure-urethane)	HPL
Forbo Adhesive	Everlock 2U131 (hotmelt polyurethane reactive adhesive)	HPL
	Everlock 2U145 (hotmelt polyurethane reactive adhesive)	HPL
	Everlock 2U259 (hotmelt polyurethane reactive adhesive)	HPL
Franklin International	Titebond Heavy Duty Construction Adhesive (solvent based)	Extira to Extira
	Titebond Trowelable Construction Adhesive (solvent based)	Extira to Extira
	Titebond Polyurethane Subfloor Adhesive	Extira to Extira
	Franklin 811 Plus Urethane Wood Floor Adhesive	Extira to Extira
	Titebond II	Extira to Extira, wood veneer
H.B. Fuller Company	RK3379001 (Precatalyzed PVAc)	HPL, Extira to Extira, and wood veneer
	UR0218MF (liquid moisture-cure urethane)	HPL, Extira to Extira
	NP2075T (hotmelt polyurethane reactive)	HPL, Extira to Extira, and wood veneer
National Casein	MB 330 (melamine powder)	wood veneer
	MUF 4301 (melamine powder)	wood veneer
	WP2457/K-4 (emulsion polymer w/catalyst)	wood veneer

INTERIOR APPLICATIONS

Wilsonart Adhesives	WA 950/951 (Solvent contact adhesive)	Extira to HPL
	WA H2O (water basted contact adhesive)	Extira to HPL
	WA 3000 (PVA for postforming)*	Extira to HPL
	WA 3132 (Hot press PVA)*	Extira to HPL
	WA 3301 (PVA)*	Extira to HPL
Sovereign Specialty Chemicals	PG107R (contact adhesive)	Extira to HPL
	PG565R (contact adhesive)	Extira to HPL

*contact Wilsonart for specific application instruction

ADHESIVE CONTACT INFORMATION:

Ashland Performance Materials

Contact: Gary Schaeffer
802 Harmon Avenue
Columbus, OH 43223
Phone: 614.232.8564
Email: gschaeffer@ashland.com

Forbo Adhesives

Contact: Rick Delaney
523 Davis Drive, Suite 400
Durham, NC 27713
Phone: 610.869.9940
Email: rick.delaney@forbo.com

Franklin International

Contact: Dale E. Zimmermann
2020 Bruck Street
Columbus, OH 43207
Phone: 800.347.4583
Email: contechs@franklininternational.com

H.B. Fuller Company

Contact: Tom Howard
1200 Willow Lake Blvd.
Vadnais Heights, MN 55110
Phone: 651.236.5695
Email: tom.howard@hbfuller.com

National Casein of New Jersey

Contact: Ken Blake
401 Martha's Lane
Riverton, NJ 08077
Phone: 856.829.1880
Email: blake@nationalcasein.com

Wilsonart Adhesives

Contact: Dave Berry
10601 NW Dodgen Loop
Temple, TX 76503
Phone: 254.207.6701
Email: berryd@wilsonart.com

Sovereign Specialty Chemicals

Contact: Vince Pearson
6315 Wiehe Road
Cincinnati, OH 45237
Phone: 513.351.1300
web: www.sovereignsc.com